

Work Order ID 79664

Blue
79664

Page 1

February-01-12 11:27:06 AM

Item ID: D206-667-147TRN

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Assembly, Mid Fwd

Stop ***NS2***

Start Date: 31/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 20/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/02/01 Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D206-667-147

A

100

0.00

100

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DTxxxx on both ends as per Folio FB029

2-Turn first side as per Folio FB029

3-File down transition lines smooth.

FOLIO REV: AA

DWG REV: A

SC 12/03/09

110

QC1- Inspect dimensions to dimension sheet

0.00

110

QC

Memo

0.00

Quality Control

SC 12/03/09

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Start Date: 31/01/2012 **Start Qty:** 1.00

*** 1 ***

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Required Date: 20/04/2012 Req'd Qty: 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

[illegible]

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Page 3

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N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Assembly, Mid Fwd

Stop ***NS2***

Start Date: 31/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 20/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
145		0.00							
145									
Crosstubes	Memo	0.00							
Crosstubes	GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.								
150	Crosstubes Chemical Conversion	0.00							
150									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									
160	QC3- Inspect Part Finish	0.00							
160									
QC	Memo	0.00							
Quality Control									

- *Rm* 12-3-10

- *Rm* 12-3-10

DD 12-3-12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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NOTE: Date & initial all entries

Work Order ID 79664

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Page 4

February-01-12 11:27:06 AM

Item ID: D206-667-147TRN Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Assembly, Mid Fwd
 Start Date: 31/01/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 20/04/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Packaging	0.00							
170									
Packaging	Memo	0.00							
Packaging	Identify and stock in kanban rack Location: <u>L/C</u>								
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

annul

12/03/12

12/3/12

MF 12-03-12

W/O:		WORK ORDER CHANGES					
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Picklist Print

February-01-12 11:27:09 AM

Page 1

Work Order ID: 79664

79664

Parent Item: D206-667-147TRN

D206-667-147TRN

Parent Item Name: Crosstube Assembly, Mid Fwd

Start Date: 31/01/2012

Required Date: 20/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 11.01.06 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6002-115		Manufactured	No			100	Each	8.0000	1	1			

D6002-115

Crosstube Material

Location

Loc Qty

Loc Code

LG

8

34684

1

34776

7

1

mm.l 12/03/07

Dart Aerospace Ltd

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 79664
Description: Crosstube Assembly, Mid Fwd		Part Number: D206-667-147TRN
Inspection Dwg: D206-667-147 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.245 ✓		Caliper	3606
	1.984	+0.005/-0.000	1.985 ✓			
	2.019	+0.005/-0.000	2.023 ✓			
	2.058	+0.005/-0.000	2.063 ✓			
	2.097	+0.005/-0.000	2.102 ✓			
	2.136	+0.005/-0.000	2.139 ✓			
	2.176	+0.005/-0.000	2.177 ✓			
	0.125	+/-0.010	.125 ✓			
	R0.063	+/-0.010	.063 ✓			
	R2.00	+/-0.010	2.00 ✓			
	R0.063	+/-0.010	.063 ✓			
	4.438	+/-0.030	4.438 ✓			
SIDE B	2.240	+0.005/-0.000	2.245 ✓		Caliper	3606
	1.984	+0.005/-0.000	1.989 ✓			
	2.019	+0.005/-0.000	2.024 ✓			
	2.058	+0.005/-0.000	2.063 ✓			
	2.097	+0.005/-0.000	2.102 ✓			
	2.136	+0.005/-0.000	2.139 ✓			
	2.176	+0.005/-0.000	2.177 ✓			
	0.125	+/-0.010	.126 ✓			
	R0.063	+/-0.010	.063 ✓			
	R2.00	+/-0.010	2.00 ✓			
	R0.063	+/-0.010	.063 ✓			
	4.438	+/-0.030	4.435 ✓			
	99.84	+/-0.020	99.84 ✓		Tape	mm/ok

Measured by: mm. l. jef	Audited by: [Signature]	Preliminary Approval:
Date: 12/03/08	Date: 12-3-9	Date:
Rev	Date	Change
A	11.06.21	New Issue
Revised by		Approved
KJ [Signature]		[Signature]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Item	Qty	Part Number	Description
1	X	D206-667-147	CROSSTUBE ASSEMBLY (206L MID FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 99.84±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-147" AND BATCH NUMBER ON
INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 15.0 lbs (-507 = 12.84)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.05" THICK LAYER OF MAGNOBOND 6398 PER QSI
015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

UNCONTROLLED
SUBMITTAL

79664 M.L.J
12/02/01

DEO ATTACHED

ECW #11-615
11.07.28

UNDER REVIEW

RELEASED
2011-05-23

A	NEW ISSUE	CP	10.11.23
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.12.23		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-147	REV. A SHEET 1 OF 4
TITLE CROSSTUBE ASS'Y (206L MID FWD)	SCALE NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

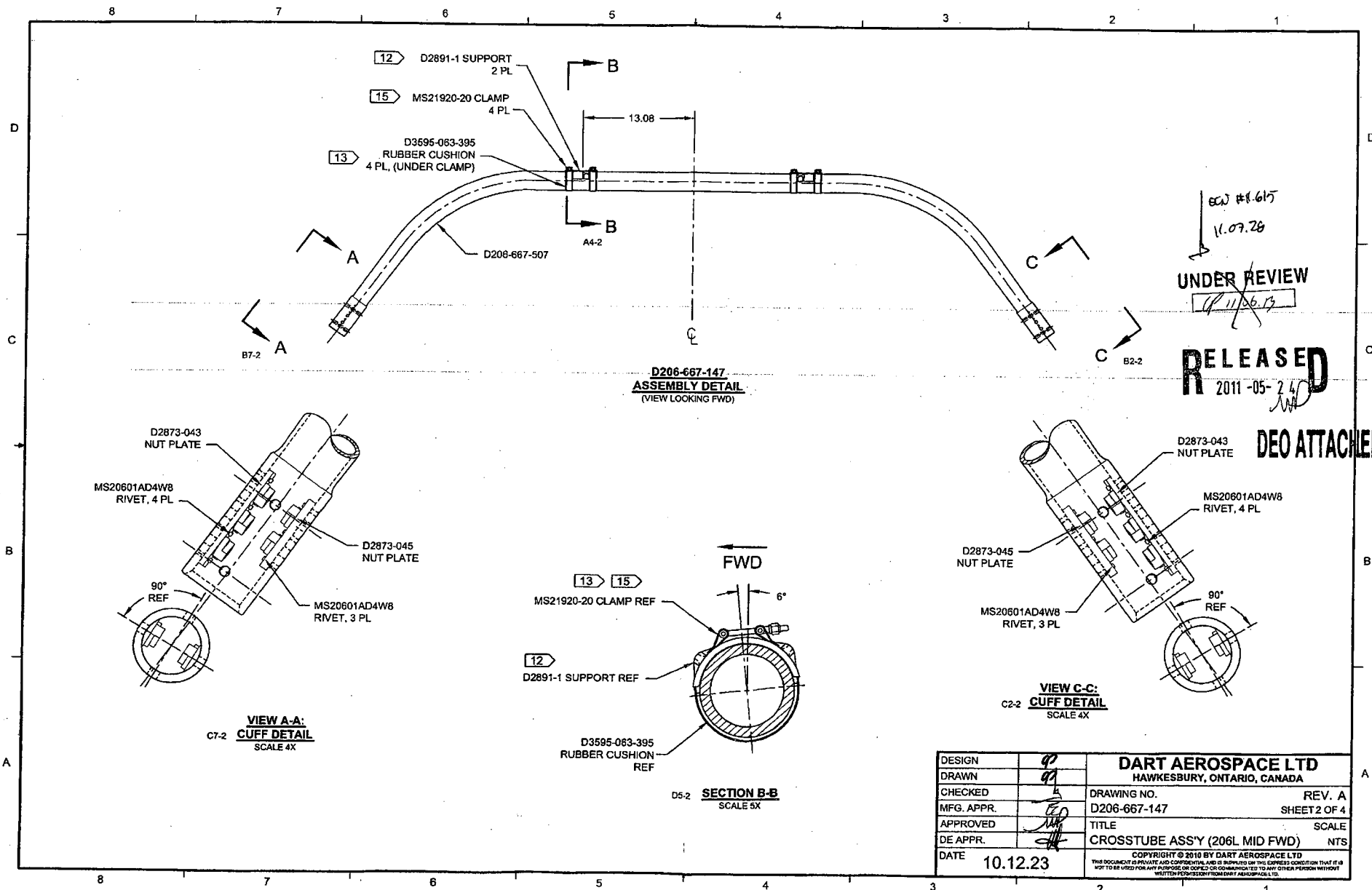
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79664



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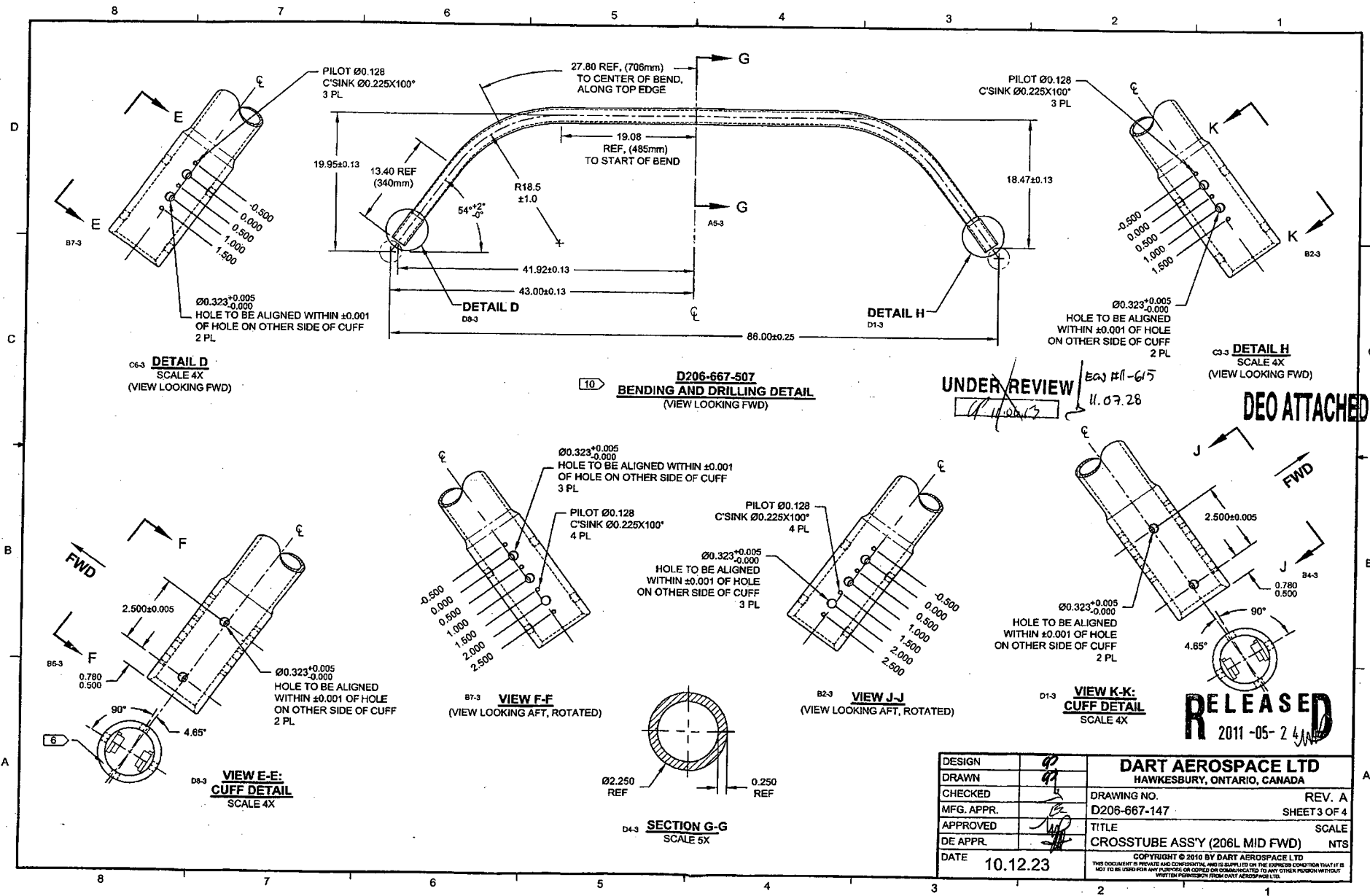
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79664



DESIGN	90	DART AEROSPACE LTD	
DRAWN	97	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-147	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSY (206L MID FWD)	NTS
DATE	10.12.23	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
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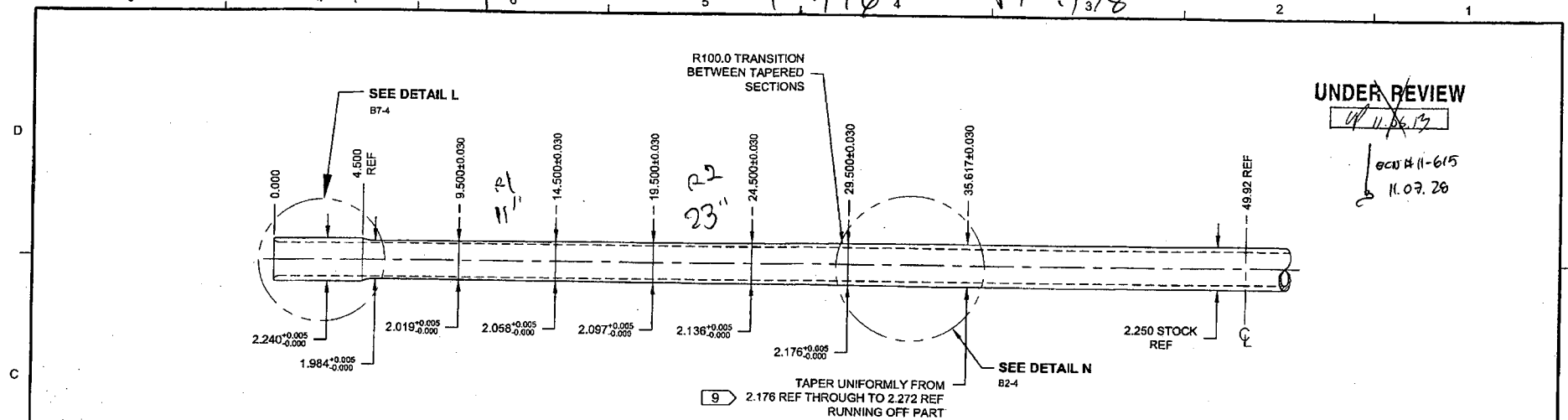
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Side A		Side B	
A1		A1	
1- .147	1- .191	1- .145	1- .196
2- .161	2- .204	2- .155	2- .210
3- .152	3- .196	3- .155	3- .199
4- .147	4- .186	4- .146	4- .178

79664

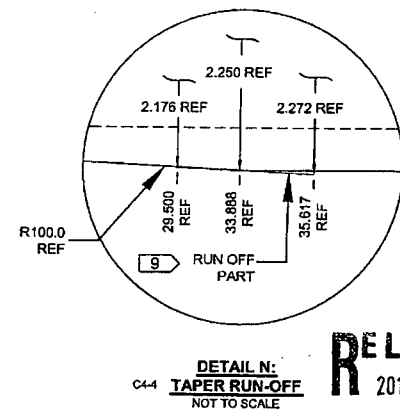
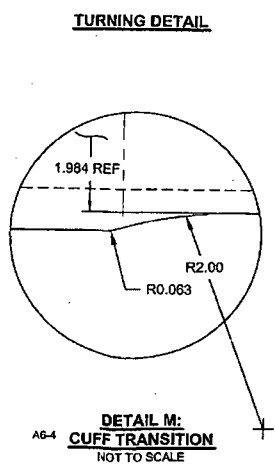
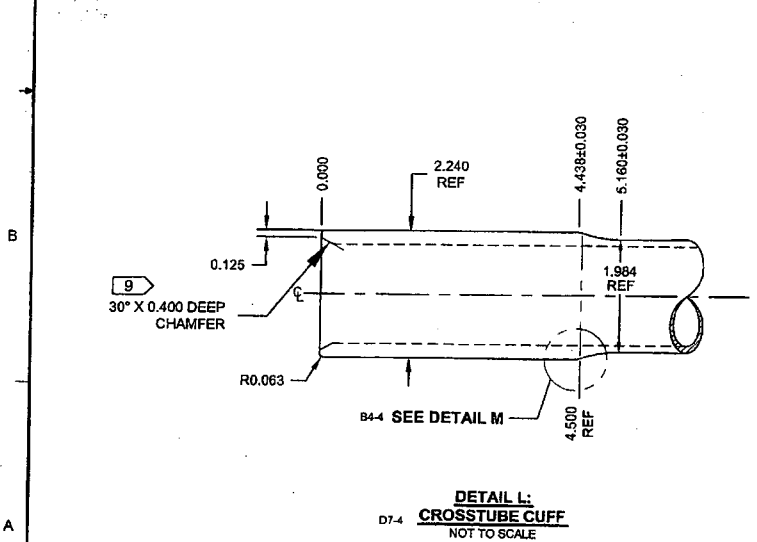


UNDER REVIEW

11.06.13

ECN # 11-615

11.09.28



DEO ATTACHED

RELEASED

2011-05-23

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-147	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID FWD)	NTS
DATE	10.12.23	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
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DRAWING NO. D206-667-147	TITLE CROSSTUBE ASS'Y (206L MID FWD)	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D206-667-147-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>JB</i>	APPROVED <i>MD</i>		DE APPR. <i>MD</i>		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -147	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRABE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28

W/O:		WORK ORDER CHANGES					
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